

Metallized Polycarbonate Film Capacitor Related Document: IEC 60 384-6

MAIN APPLICATIONS:

Storage, filter, timing and integrating circuits.

MARKING:

Manufacturer's logo/type/C-value/rated voltage/tolerance/date of manufacture

DIELECTRIC:

Polycarbonate film

ELECTRODES:

Vacuum deposited aluminum

COATING:

Plastic-wrapping, epoxy resin sealed

CONSTRUCTION:

Extended metallized film (refer to general information)

LEADS:

Tinned wire

IEC TEST CLASSIFICATION:

55/100/21, according to IEC 60068

OPERATING TEMPERATURE RANGE:

- 55°C to + 100°C

CAPACITANCE RANGE:

0.01µF to 10µF

CAPACITANCE TOLERANCES:

± 10% (K), ± 5% (J)

RATED VOLTAGES (U_R):

63 VDC, 100 VDC, 250 VDC, 400 VDC

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz:

40 VAC, 63 VAC, 160 VAC, 200 VAC

TEST VOLTAGE (ELECTRODE/ELECTRODE):

1.6 x U_R for 2 s

INSULATION RESISTANCE:

Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute

For C ≤ 0.33µF and U_R > 100 VDC:

30,000 MΩ minimum value (100,000 MΩ typical value)

For C ≤ 0.33µF and U_R ≤ 100 VDC:

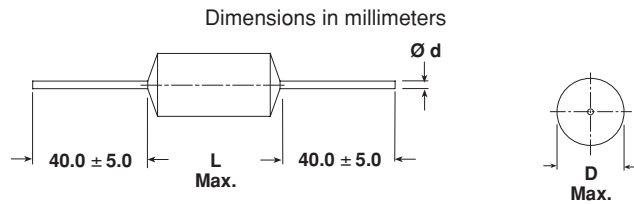
15,000 MΩ minimum value (50,000 MΩ typical value)

MAXIMUM PULSE RISE TIME

CAPACITOR LENGTH (mm)	Maximum pulse rise time d _v /d _t [V/µs]			
	63 VDC	100 VDC	250 VDC	400 VDC
14	17	23	38	61
19	9	13	21	33
26.5	6	8	13	20
31.5	5	6	10	16

If the maximum pulse voltage is less than the rated voltage higher d_v/d_t values can be permitted.

Please note: these capacitors are not recommended for new designs



D	Ø d
≤ 7.0	0.7
< 16.0	0.8
≥ 16.5	1.0

TIME CONSTANT:

Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute

For C > 0.33µF and U_R > 100 VDC:

10,000 s minimum value (40,000 s typical value)

For C > 0.33µF and U_R ≤ 100 VDC:

5,000 s minimum value (15,000 s typical value)

CAPACITANCE DRIFT:

Up to + 40°C, ± 2% for a period of two years

DERATING FOR DC AND AC. CATEGORY VOLTAGE U_C:

At + 85°C: U_C = 1.0 U_R

At + 100°C: U_C = 0.8 U_R

SELF INDUCTANCE:

~ 12 nH measured with 6mm long leads

PULL TEST ON LEADS:

≥ 20 N in direction of leads according to IEC 60068-2-21

BEND TEST ON LEADS:

2 bends through 90° with half of the force used in pull test

RELIABILITY:

Operational life > 300,000 h

Failure rate < 1 FIT (40°C and 0.5 x U_R)

For further details, please refer to the general information provided in this catalog.



DISSIPATION FACTOR TAN δ

MEASURED AT	C ≤ 0.1µF	0.1µF < C ≤ 1.0µF	C > 1.0µF
1kHz	3 x 10 ⁻³	3 x 10 ⁻³	3 x 10 ⁻³
10kHz	4 x 10 ⁻³	4 x 10 ⁻³	—
100kHz	10 x 10 ⁻³	—	—
Maximum values			

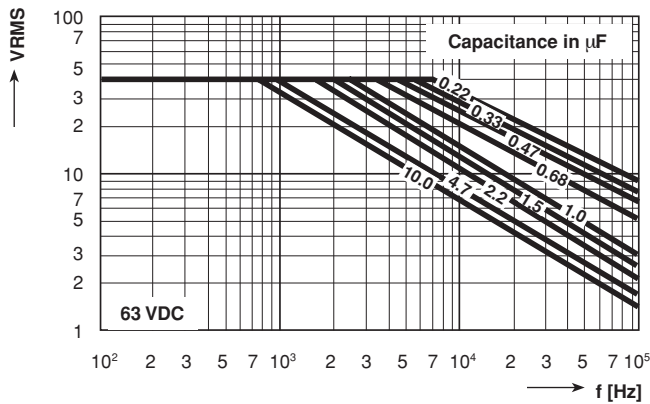
CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 06 63 VDC/ 40 VAC		VOLTAGE CODE 01 100 VDC/ 63 VAC		VOLTAGE CODE 25 250 VDC/ 160 VAC		VOLTAGE CODE 40 400 VDC/ 200 VAC	
		D	L	D	L	D	L	D	L
0.01 µF	- 310	—	—	—	—	—	—	6.0	14.0
0.015 µF	- 315	—	—	—	—	—	—	6.0	14.0
0.022 µF	- 322	—	—	—	—	—	—	6.0	14.0
0.033 µF	- 333	—	—	—	—	6.0	14.0	6.0	14.0
0.047 µF	- 347	—	—	—	—	6.0	14.0	7.0	14.0
0.068 µF	- 368	—	—	—	—	6.0	14.0	8.0	14.0
0.10 µF	- 410	—	—	6.0	14.0	7.0	14.0	7.5	19.0
0.15 µF	- 415	—	—	6.0	14.0	7.5	14.0	8.5	19.0
0.22 µF	- 422	6.0	14.0	6.0	14.0	7.0	19.0	8.5	26.5
0.33 µF	- 433	6.0	14.0	6.0	19.0	8.0	19.0	10.0	26.5
0.47 µF	- 447	7.0	14.0	7.0	19.0	9.5	19.0	11.5	26.5
0.68 µF	- 468	6.5	19.0	8.0	19.0	9.0	26.5	12.0	31.5
1.0 µF	- 510	7.5	19.0	9.0	19.0	10.5	26.5	14.5	31.5
1.5 µF	- 515	8.5	19.0	9.0	26.5	11.5	31.5	—	—
2.2 µF	- 522	9.0	19.0	10.5	26.5	13.5	31.5	—	—
3.3 µF	- 533	9.5	26.5	12.5	26.5	—	—	—	—
4.7 µF	- 547	11.0	26.5	13.0	31.5	—	—	—	—
6.8 µF	- 568	12.0	31.5	15.5	31.5	—	—	—	—
10 µF	- 610	14.0	31.5	17.5	31.5	—	—	—	—

Further C-values upon request
pcm = L + 3.5

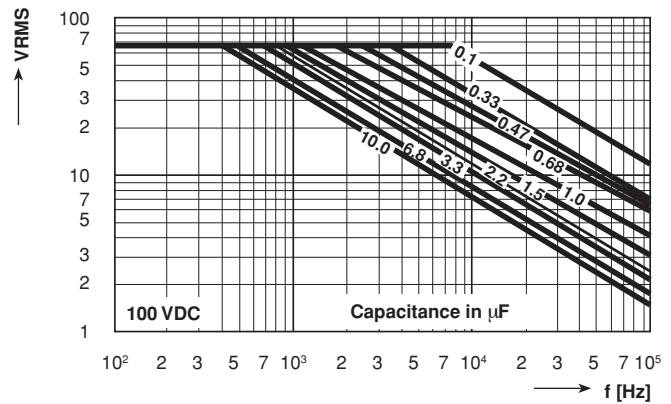
RECOMMENDED PACKAGING

LETTER CODE	TYPE OF PACKAGING	REEL DIAMETER (mm)	ORDERING CODE EXAMPLE	
G	AMMO	—	MKC 1860-422/404-G	X
R	REEL	350	MKC 1860-422/404-R	X
—	BULK	—	MKC 1860-422/404	X

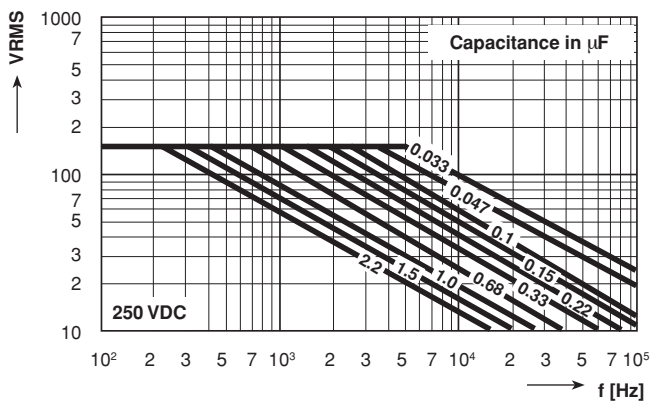
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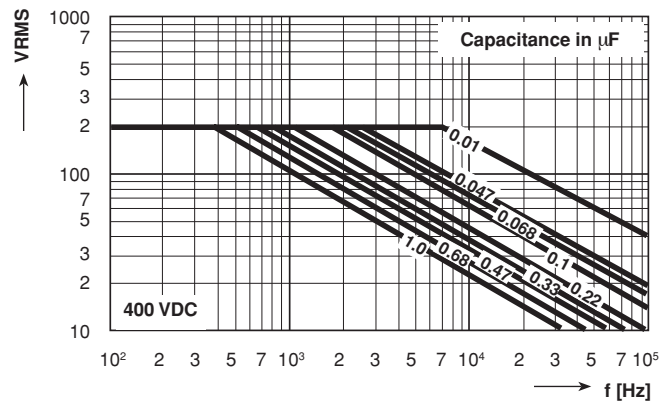
Permissible AC Voltage versus Frequency



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